



Isaac Newton

Most Important Inventor To Modern Science.

Invented laws on:

- Gravity: Law of Universal Gravitational Force

- Motion: 3 Laws

- The breakdown of color: White Light =

R.O.Y.G.B.I.V

Invented:

- Calculus

- The Reflecting Telescope

- The Visible Picture of the Earth's Orbit

Solved All The Scientific Questions of His

Time

Law of Gravitational Force

He watched an apple fall from a tree. He figured that in order for the apple to fall there had to be an unbalanced force.



If the upward force was from the tree, where was this more powerful downward force coming from to create this unbalanced force?

Answer: GRAVITY

His discovery and theories on gravity helped explain many things in nature.

This is why force is measured in Newtons (N).

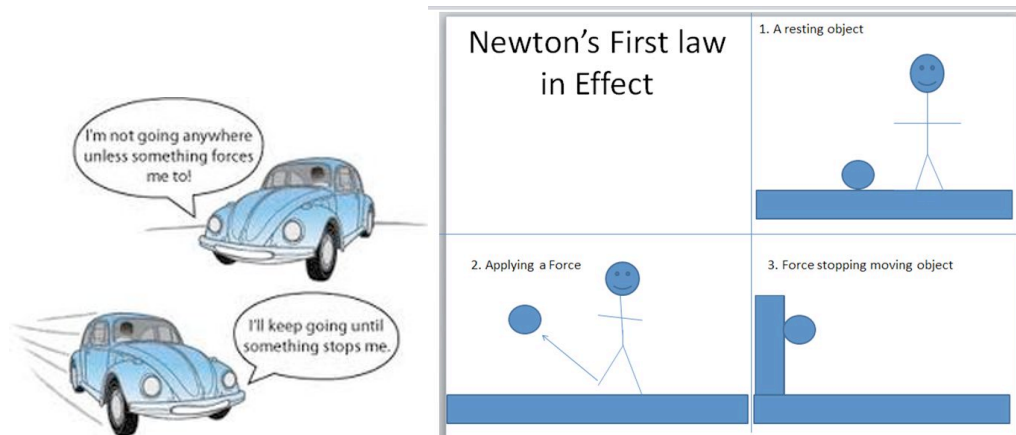
It is named after him.

## Newton's Three Laws of Motion

### 1<sup>st</sup> Law: The Law of Inertia

An object at rest will stay at rest and an object in motion will stay in motion unless acted upon by an unbalanced force

The more inertia(mass) an object has the more likely it is going to keep doing what it is doing unless there is a change due to a large unbalanced force.



**A bowling ball**  
5,000 grams  
5 kilograms



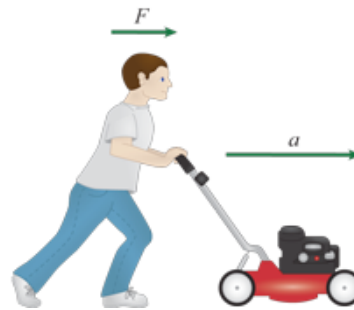
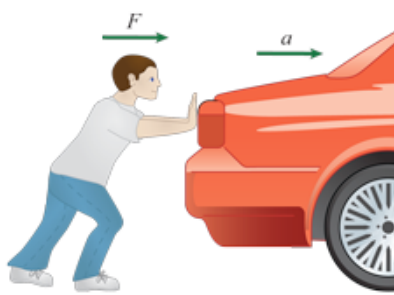
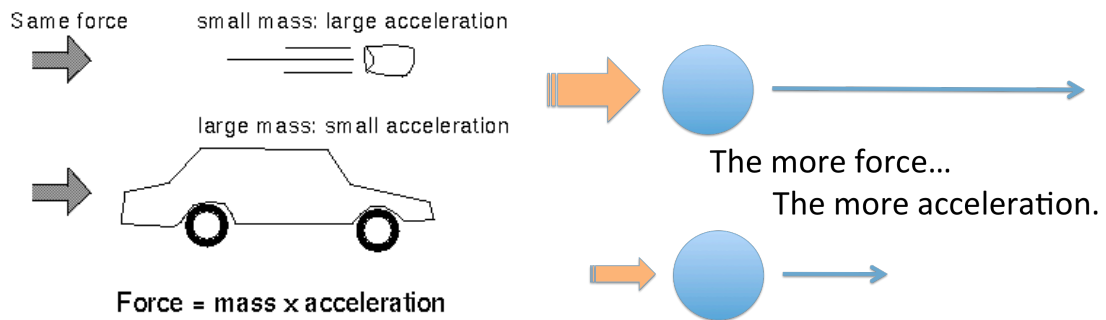
**A golf ball**  
50 grams  
0.050 kilogram

*A bowling ball has more mass than a golf ball. The bowling ball is harder to move because it has more inertia.*

Other Examples:

2nd Law: Acceleration = Force/Mass or Force = Mass x Acceleration

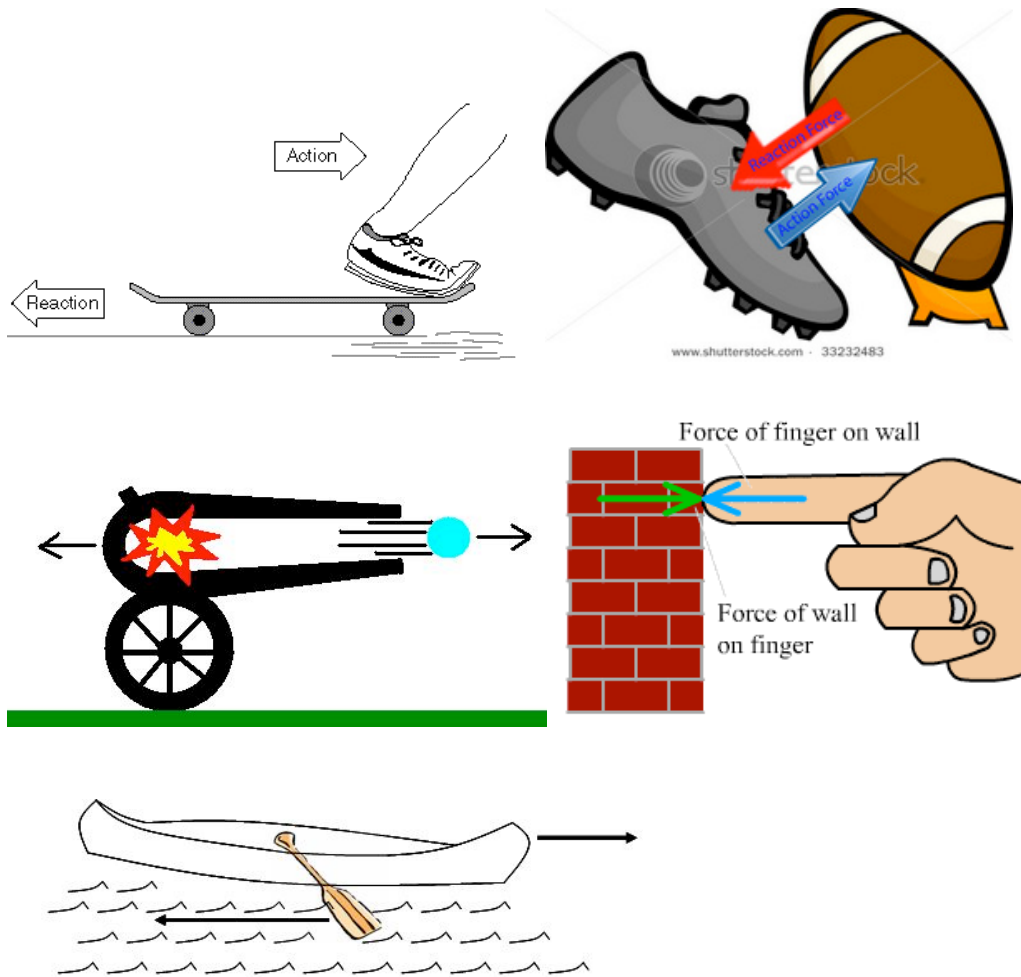
The acceleration (change in velocity) of an object depends on the net forces on that object and its mass. OR The amount of net force depends on the mass and acceleration of an object



Other Examples:

### 3<sup>rd</sup> Law: Action-Reaction

For every action there is an equal and opposite reaction.



Other Examples: